

REMARKS

In this Amendment, Applicant has amended Claims 6 and 14 to overcome the rejection and specify the embodiments of the present invention. The support for the amendment can be found throughout the specification. In addition, the specification has been amended to correct informalities. It is respectfully submitted that no new matter has been introduced by the amended claims and specification. All claims are now present for examination and favorable reconsideration is respectfully requested in view of the preceding amendments and the following comments.

OBJECTIONS TO SPECIFICATION:

The specification has been objected as containing certain informalities.

It is respectfully submitted that the objections have been overcome by the presently submitted amendments. "additi n" has been replaced with "addition."

Therefore, the objection has been overcome. Accordingly, withdrawal of the objections is respectfully requested.

DATA IN SPECIFICATION:

The Examiner has requested for an explanation of certain data in the specification. It is respectfully submitted that the liquid surfactant used in formulation A corresponds to the commercial product named "ULTRAMINE 200" of OXITENO, and this liquid product is an ETHOXYLATED FATTY AMINE WITH 15-20 MOLS OF ETHYLENE OXIDE.

REJECTIONS UNDER 35 U.S.C. § 112 SECOND PARAGRAPH:

Claims 6 – 10 and 12 – 14 have been rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is respectfully submitted that the objections have been overcome by the presently submitted amendments. At first, Claim 6 and 14 have been amended to delete the term "compatible with Glyphosate and." This term is now superfluous as it was concerned with the

possibility of certain hypothetical phase separation between the ammonium Glyphosate and the tensioactive agent when the herbicidal formulation was prepared for its final application (by adding water). After having limited the hydrosoluble tensioactive agents to a very low number of tensioactive agents without those hypothetical disadvantages the term "compatible" becomes superfluous.

In addition, the step (c) in Claims 6 and 14 have been further specified to "granulating or flaking the homogeneous mixture and drying the obtained granules or flakes up to a moisture content of ≤ 0.5 % by weight; or drying the homogeneous mixture up to a moisture content of ≤ 0.5 % by weight and grinding the resulting product to obtain a powder." This amendment is sufficiently supported by the specification. Furthermore, the correct term "polyoxyethylene" has been used in Claims 6 and 14.

Therefore, the rejection under 35 U.S.C. § 112, second paragraph, has been overcome. Accordingly, withdrawal of the rejections under 35 U.S.C. § 112, second paragraph, is respectfully requested.

REJECTIONS UNDER 35 U.S.C. § 103:

Claims 6 – 10, 12 and 13 have been rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Chan (EPA 0206537).

Applicant traverses the rejection and respectfully submits that the embodiments of the presently claimed invention are not obvious over the cited reference because they are significantly different from the disclosure of Chan. The pending claims have been amended to define "A process for the preparation of a solid herbicidal formulation of N-(phosphonomethyl)glycine, in powder, granule or flake form, soluble or dispersible in water, consisting essentially of Glyphosate (N-(phosphonomethyl)glycine) in the form of ammonium salt and 5 % to 30 % by weight of a hydrosoluble tensioactive agent, which is solid at ambient temperature of about 25° C, said process consisting essentially of the steps of:

(a) mixing N-(phosphonomethyl)glycine with an equimolar quantity of ammonium bicarbonate and between 5 % and 30 % by weight of the solid tensioactive agent of the dry

weight of the final mixture, at 25° C, wherein the solid tensioactive is selected from the group consisting of urea-supported ethoxylated alcohol, sodium methyl oleyltaurate, fatty acid polyoxiethylene ester and sodium dioctylsulosuccinate,

(b) kneading or mixing the resulting formulation until the mixture is completely homogenized, and

(c) granulating or flaking the homogeneous mixture and drying the obtained granules or flakes up to a moisture content of ≤ 0.5 % by weight; or drying the homogeneous mixture up to a moisture content of ≤ 0.5 % by weight and grinding the resulting product to obtain a powder.”

The main characteristic of the process of this invention is based on that stage (a) comprises mixing Glyphosate, ammonium bicarbonate and a solid surfactant agent, substantially in absence of added water. This means that stage (a) essentially consists in the mixture of three ingredients which are **solid at room temperature** and furthermore are **substantially no provided with water** (only Glyphosate, of technical degree, can have small quantities of water).

Moreover, as Applicant has previously demonstrated, the solid surfactant agents used in the process of instant application are **powdery** solids, such that can be noted that stage (a) of the claimed process consists in **a completely dry mixture of the powder ingredients.**

Finally, as originally pointed out in the description, in the examples and claims of the application, stage (a) of the claimed process **is performed at a temperature of 25° C** (room temperature).

In addition, it is important to emphasize that in stage (a) of the process of instant application **a solid-solid chemical reaction occurs between Glyphosate and ammonium bicarbonate.**

The mixture of ingredients in stage (a), independently of the sequence of addition of ingredients, is an easy mixture to mix and knead (stage (b) of the process) in conventional equipments and wherein the neutralizing chemical reaction between Glyphosate (acid) and ammonium bicarbonate (base) releases water and carbon dioxide favouring mixing and the complete neutralizing reaction without affecting the particulated texture of the mixture and ease of later manipulation (stage (c) of the process).

Non-obviousness of the present invention

In order to demonstrate that the process of this application **not only is different from the process Chan claims but also that it is not a methodology that a person skilled in the art would consider obvious from the information Chan disclosed**, Applicant analyzes as follows the characteristics of the method claimed in said document and the reasons why said technology neither discloses nor suggests the process claimed in this application.

In claim 7 of Chan, it defines the following method:

7. A method for the preparation of a solid, phytoactive, composition comprising:
 - (a) forming an initial mixture comprising a phytoactive N-phosphonomethyl-N-carboxymethyl compound, a solvent and a molten surfactant, the surfactant being solid at ambient temperatures;
 - (b) removing solvent from said initial mixture to form a final mixture at a temperature above the melting point of the surfactant; and
 - (c) cooling said final mixture to a temperature below the melting point of the surfactant to form a N-phosphonomethyl-N-carboxymethyl composition which is solid at ambient temperature.

Stage (a) in Chan's method comprises mixing three ingredients: **a phytoactive compound** (which could be Glyphosate, or a salt thereof), **a solvent and a molten surfactant**. Therefore, stage (a) of Chan's method discloses a mixture of ingredients **in liquid form** as both the solvent and surfactant are in liquid form. Consequently, it is a damp method. In addition, stage (a) of Chan's method is carried out at **a higher temperature than that of room temperature** as the surfactant (which is solid at room temperature) must be molten. Furthermore, in stage (a) of Chan's method **no chemical reaction occurs between the components of the mixture**.

Therefore, stage (a) of the mixture in Chan's method is defined on the basis of four essential operative conditions which are as follows:

- 1) **qualitative chemical composition;**
- 2) **mixing stage;**
- 3) **mixing temperature; and**
- 4) **chemical reactivity of the mixture.**

As the Examiner may agree, none of these four essential characteristics of Chan's method coincide with the characteristics of the method of instant application.

1) In fact, in instant application the chemical composition of the **initial** mixture of the ingredients is always different to Chan's mixture in that in instant application Glyphosate, a surfactant and ammonium bicarbonate are mixed.

Ammonium bicarbonate, always present in the mixing stage of the process of instant application, is a component which is neither foreseen nor suggested in the mixture of ingredients of Chan's process. Chan's process only discloses the possibility of using ammonium Glyphosate as a component of the initial mixture.

Furthermore, the mixture of components in the method of instant application does not include any solvent, which is included as a necessary and indispensable component in Chan's claimed method.

2) In the process of instant application stage (a) comprises mixing three ingredients which are **solid at room temperature**, and further are **substantially not provided with water**. **Therefore, the process of instant application is a process carried out in solid form.**

To the contrary, in Chan's method at least two ingredients are liquid (the solvent and molten surfactant) so that stage (a) of mixing is performed in a liquid or fluid form.

3) In Chan's method the mixing stage of ingredients must be performed at a temperature that is **always** higher to that of room temperature (around 25° C) as the surfactants (which are solid at room temperature) must be used molten.

4) At the mixing stage of the process of instant application two of the components of the mixture, Glyphosate and ammonium bicarbonate, chemically react to form ammonium Glyphosate *in situ*. This deals with a mixing process which comprises a solid-solid chemical reaction.

To the contrary, in Chan's method, there is no chemical reaction between the components of the mixture.

The significant previously commented differences between the mixing stages (a) of both processes directly have a bearing on the characteristics of stages (b) of both methods.

In fact, while in Chan's method stage (b) refers to an evaporation operation of the solvent, in the process of instant application stage (b) comprises a kneading or mixing operation till complete homogeneity of the mixture.

Further, both stages (b) are carried out in different thermal conditions: while in the process of instant application kneading of the mixture is performed at room temperature, in Chan's method **removal of the solvent is performed at a temperature above the surfactant's melting point.**

Finally, Chan's method requires a final stage (c) for cooling the molten mixture while in the process of instant application it is not necessary to cool the homogenous mixture of stage (b) which can be directly processed in stage (c) for its final conditioning as a powder, granules or scales.

The noteworthy differences there are between the Chan claims and the process of instant application claims not only back novelty of the process of instant application compared to the

relevant document but also is the basis of the technical arguments that will allow to demonstrate a non-obvious condition of the process of instant application.

In fact, analysing firstly the content of 11 experimental preparation examples of the phytoactive compositions described in detail in Chan's patent (EP 0 206 537 B1) the following conclusions can be arrived at:

- All the experimental examples described in Chan's patent **strictly adjust** to the stages and operative conditions of the method **claimed** in said patent.
- In stage (a) of all the examples a **molten surfactant and aqueous solutions of the phytoactive active principle** are used, i.e., that liquid mixtures are performed with all the ingredients, **at temperatures higher than that of room temperature (25° C).**
- In stage (b) of all the examples, **temperature conditions (90-100° C) much higher than the melting point of the surfactants are used and always under low pressure conditions (1-10 mmHg) are used to remove the solvent.**
- **In all the examples the product obtained must be removed from the container with a spatula and transformed into powder using a mortar.**

Comparing enunciation of these **objective** conclusions, based on the examples content and on claim 7 (method) of Chan's patent, one could question the reason which would have brought about an expert in the art to deviate from Chan's patent teachings and obviously imagine the process claimed in instant application if:

- **In none of the examples is a phytoactive composition prepared based on ammonium Glyphosate.**
- **None of the examples describe preparing an initial mixture with solid ingredients without water.**

- None of the examples describe use of aqueous solutions of the active principle **with water quantities lower than 40 % by weight.**
- None of the examples describe preparing stage (a) of mixing ingredients at room temperature.
- None of the examples describe preparing initial mixtures of components wherein a chemical reaction is performed between the phytoactive compound and a neutralizing alkaline agent.
- In none of the examples is a ammonium bicarbonate and Glyphosate mixture used as initial components of the mixture of ingredients.

Now then, on page 5 of the office action, the Examiner has declared that the process claimed in instant application is obvious, and hence non-patentable, because of the complete content of Chan's patent, specially citing several paragraphs of the description of said patent.

However, Applicant considers that from a careful reading of the content of the paragraphs the Examiner has cited (and analysed next) no information or suggestion can be deduced that backs the Examiner's opinion as to obviousness of the process claimed in instant application. In fact, in paragraphs on page 3, lines 21-33 and page 4, lines 1-9 Chan's patent only transcribes the method of claim 7 of Chan's patent, which content has previously been analysed, Applicant having demonstrated that said method does not allow an expert in the art to obviously deduce the process of instant application.

In the following paragraphs on page 6, lines 16-33 and page 7, lines 1-2, the following physical properties of the surfactants are described that can be used in Chan's method: high melting point (above 50° C), absence of hygroscopicity, solubility of the diluents chosen for the final use of the composition, solubility in water and low formation of foam (particularly under vacuum).

In present application, the only important characteristic of the humectant that is induced from the application is that the humectant not only must be solid at room temperature but as powder so as to be included homogenously in the test conditions (solid mixtures). Even if a person of ordinary skill in the art remotely imagine as Chan says a molten humectant, this could not be applied in our process, so as to assure a homogenous inclusion the process should be performed in moistened conditions.

However, all these physical properties of the surfactants that can be used in Chan's patent do not defeat obviousness of the process of this application as although surfactants are used in the process of this application, only surfactants that are solid at 25° C are used, in the method of Chan's patent the surfactants are always used molten, there being in said patent no information or suggestion that allows an expert in the art to obviously imagine an initial stage of mixing the ingredients at room temperature.

Finally, in the paragraph of page 11, lines 19-31 of Chan's patent the relation of the phytoactive component to surfactant are described, which are typically 10:1 to 1:10 preferably 4:1 to 1:2, and most preferably 2:1 to 1:1.

The Applicant's opinion, these references of Chan's patent as regards a possible final composition of the phytoactive product do not either defeat obviousness of the process claimed in instant application as the subject-matter of this discussion is based on the novelty and inventive step characteristics of the method of instant application as compared to Chan's method and not on the possible similarities and differences between the compositions of the products obtained by both methods.

Next, the Examiner has pointed out (page 6 of the office action) that the process of instant application differs from the relevant document in that said process does not claim use of any solvent while the relevant document teaches use of a solvent in the initial stage, which is later removed to finally provide a dry product.

In this regard, the Examiner has pointed out from Chan's teachings that the expert in the art would have a reason to use a solid surfactant to prepare useful additional compositions to those disclosed in the relevant document as said document teaches that it is important that the

surfactant be solid at the temperature at which the solid product (phytoactive composition) can be exposed to before mixing it with the diluents by the final user that applies the product.

In this regard, Applicant considers that, as the Examiner has declared, Chan's patent could bring about an expert in the art to prepare additional compositions to those disclosed in said patent using surfactants that are solid at room temperature, nevertheless the expert in the art would have had no reason to use a different method that that disclosed in the description of Chan's patent and in particular in its examples, wherein said surfactants are always used molten to form initial aqueous solutions containing the phytoactive principle.

Moreover, the description of Chan's patent is clearly addressed to the description of a method wherein the initial mixture of the ingredients are always carried out in liquid form.

For example, in paragraphs 3 and 4 of page 12 of Chan's patent indicates that the phytoactive compound (PMCM) is preferably dissolved or dispersed in the **solvent**, and when a salt of the phytoactive compound is prepared *in situ*, **said salt is prepared in presence of water.**

Definitively, the method described in detail in Chan's patent induces an expert in the art to always use a method in a humid manner to mix the initial ingredients.

Therefore, it is evident that the process claimed in the present application would not have been obvious to one skilled in the art since, without having examined the content of the present application, a person skilled in the art would not have considered obvious to substantially amend Chan's method:

- using a dry mixture of solid ingredients,
- kneading the mixture of ingredients at room temperature,
- preparing *in situ* a Glyphosate salt in the same reactor wherein the ingredients are mixed.

It is evident from Chan's patent that it does not contain any suggestion or information that might have induced a person skilled in the art to bring about in an obvious manner so many simultaneous changes in the process described as to reproduce the presently claimed process and

thereby attain, in a an obvious manner too, a product having similar properties to those of the product given as examples in said patent.

After reading Chan's patent, an expert in the matter would discard use of a solid humectant as said process implies adding molten humectant, homogenize in liquid form, remove the solvent by distillation under reduced pressure, cool, discharge and grind the mixture obtained. That is various unitary operations.

Applicant believes Chan's patent proposes a complicated process from which the necessary tools could not be obtained which would lead to our invention: selection of a humectant, equipment, energy saving to easily prepare in one step a mixture of ammonium Gglyphosate and humectant, easy to granulate, extrude or flake.

The unexpected results does not consist in the herbicidal properties of the formulations obtained with the process of present application but precisely in **the unexpected simplicity and efficiency of the process as compared with the processes of the previous art. For which reasons, Applicant considers that the process claimed in instant application is not obvious when compared to the information Chan discloses.**

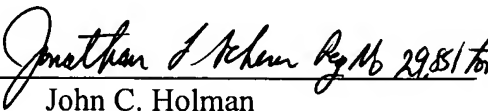
Therefore, the rejection under 35 U.S.C. § 103 has been overcome. Accordingly, withdrawal of the rejection under 35 U.S.C. § 103 is respectfully requested.

Having overcome all outstanding grounds of rejection, the application is now in condition for allowance, and prompt action toward that end is respectfully solicited.

Respectfully submitted,

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